[0032] What is claimed is:

1. A portable communication device comprising:

a sigma-delta N-phase shift keying modulator having a non-uniform polar quantizer.

2. The portable communication device of claim 1 wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

3. A portable communication device comprising:

a sigma-delta N-phase shift keying modulator able to convert a baseband input signal into a quantized output signal, the modulator comprising:

an adder able to subtract said quantized output signal from said baseband input signal to produce a difference signal;

an integrator able to integrate said difference signal to produce an integrated signal; and

a non-uniform polar quantizer able to produce said quantized output so that it represents a symbol selected from a set of N symbols according to which of a set of N non-uniform cells the phase of said integrated signal belongs, said N non-uniform cells completely covering the complex plane in a non-overlapping manner.

4. The portable communication device of claim 3, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

5. A transmitter comprising:

a dipole antenna;

a sigma-delta N-phase shift keying modulator coupled to said dipole antenna, said modulator comprising :

a non-uniform polar quantizer.

6. The transmitter of claim 5 further comprising:

a switching amplifier coupled to said modulator and to said dipole antenna.

7. The transmitter of claim 6, wherein said switching amplifier comprises a class-E power amplifier.

8. The transmitter of claim 6 further comprising:

a bandpass filter coupled to output of said switching amplifier and coupled to said dipole antenna.

9. The transmitter of claim 5, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

10. A mobile telephone comprising:

a dipole antenna; and

a sigma-delta N-phase shift keying modulator coupled to said dipole antenna, said modulator comprising :

a non-uniform polar quantizer.

11. The mobile telephone of claim 10 further comprising:

a switching amplifier coupled to said modulator and to said dipole antenna.

12. The mobile telephone of claim 11, wherein said switching amplifier comprises a class-E power amplifier.

13. The mobile telephone of claim 11 further comprising:

a bandpass filter coupled to output of said switching amplifier and coupled to said dipole antenna.

14. The mobile telephone of claim 10, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

15. A method comprising:

subtracting a quantized output signal from a baseband input signal to produce a difference signal;

integrating said difference signal to produce an integrated signal; and

producing said quantized output by selecting a symbol from a set of N symbols according to which of a set of N non-uniform cells the phase of said integrated signal belongs, said N non-uniform cells completely covering the complex plane in a non-overlapping manner.

16. The method of claim 15, wherein said baseband input signal is analog and further comprising:

converting said quantized output signal from digital to analog prior to subtracting said quantized output signal from said baseband input signal.

17. The method of claim 15, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

18. The method of claim 15, further comprising:

using said quantized output signal to select one of N carrier signals each having a frequency and a different one of N phases, thus producing a constant envelope signal at said frequency having variable phase; and

amplifying, filtering and transmitting said constant envelope signal.

19. The method of claim 18, wherein said frequency is a radio frequency.